REMARKS

In the Office Action dated June 30, 2003, claims 1-2, 4, and 6-19 are pending. Applicant recognizes the allowability of claims 7 and 14 if rewritten in independent form. Claims 1, 12, and 19 are independent claims from which claims 2, 4, 6-11, and 13-18 depend therefrom.

Claims 1-2, 11-12, and 18-19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (Fig. 1) in view of Little et al. (USPN 5,430,568). The Examiner relies on Little for the disclosure of a pre-distortion network located in a high temperature zone.

Claims 1, 12, and 19 are similar and recite common elements that are not shown in the prior art. Claim 1 recites a traveling wave tube circuit assembly that includes a traveling wave tube. A pre-distortion network is coupled to the traveling wave tube. The pre-distortion network is disposed in a high temperature zone. A connecting cable is coupled between an amplifier and the pre-distortion network. Claim 12 also recites a traveling wave tube circuit assembly and includes the stated limitations of claim 1. Claim 19 recites a satellite and includes the stated limitations of claim 1.

The pre-distortion network claimed is capable of operating in high temperatures that are associated with a traveling wave tube. In so doing, the pre-distortion network minimizes the need for alignment of a linearizer within a traveling wave tube.

Little discloses an optical communication system that is used for ground based fiber optic communication over long distances, such as for the cable television division (CATV). The communication system includes a transmitter, at a headend location, that transmits multiple channels to multiple remote hubs, via a fiber optic cable. The transmitter includes multiple compensation circuits and lasers. The compensation circuits are used to correct harmonic distortion of optical signals prior to emission by multiple lasers.

The compensation circuits of Little are not the same as the pre-distortion network claimed in the present application. The compensation circuits do not include the same components as that of the pre-distortion network nor are the components in a similar arrangement. Although the compensation circuits of Little include an amplitude adjuster and a phase adjuster, the manner as to which these devices are utilized is different from the manner as to which the attenuator and the phase shifter of the pre-distortion network of the present invention are used. The amplitude adjuster and the phase adjuster, of Little, are used in parallel to adjust second order and third order distortions of an input modulation signal. The attenuator and phase shifter, of the claimed pre-distortion network, are used in series to adjust an RF input signal.

The compensation circuits do not include the limiters, attenuators, and phase shifters of the claimed pre-distortion network and thus, also do not include the arrangement thereof. For example, the amplitude adjuster and phase adjuster are used in parallel with each other and in parallel with a distortion network whereas the attenuator and phase shifter of the pre-distortion network of the present invention are in series.

The compensation circuits, of Little, do not perform the same function as the claimed pre-distortion network. The compensation circuits are used to correct harmonic distortion from the lasers and from optical amplifiers whereas the claimed pre-distortion network is used to complement amplitude and phase characteristics of a traveling wave tube.

The Office Action states that the compensation circuits of Little compensate for nonlinearities due to temperature changes. Although this may be true, it is irrelevant. The compensation circuits include a temperature compensation device that adjusts output of an amplitude adjuster and a phase adjuster in response to change in temperature. On the other hand, the claimed pre-distortion network of the present application includes components that are capable of operating in high temperatures without the need for temperature

compensation devices. Also, nowhere in Little is it stated that the compensation circuits are capable of operating in high temperatures, but rather states that they are capable of adjusting or compensating for temperature changes to maintain a predetermined amount of gain.

Additionally, note that the compensation circuits are located subsequent to transmission within the fiber optic cable. This is unlike the present invention. The pre-distortion network of the present invention is located downstream from the RF connecting cable and is located within the high-temperature zone.

Also, referring to MPEP 2141.01(a), although the Patent Office classification of references and cross-references are some evidence of "analogy", the court has found that "the similarities and differences in structure and function of the inventions carry far greater weight." *In re Ellis*, 476 F.2d 1370, 1372, 177USPQ 526, 527 (CCPA 1973). Accordingly, although Little may be in the same U.S. classification as the present invention, the Applicant submits that it is nonanalogous art. Little is directed towards a ground based optical communication system for long distance fiber optic cable applications whereas the present invention is directed towards satellite wireless communication systems. The communication system of Little is not structurally similar and does not perform the same function as the traveling wave tube circuit assembly of the present invention. More directly, the compensation circuits of Little are not component equivalent, are not arranged in a similar manner, and do not perform the same as the pre-distortion network of the present invention.

It would not be reasonable to think that one skilled in the art who is creating a traveling wave tube circuit assembly would reasonably be expected to consider a reference dealing with fiber optic communication for CATV. The Little reference would not have commended itself to the inventor's attention in considering the problem solved by the present invention and is therefore nonanalogous art.

Furthermore, there is no motivation suggested within either the applicant's admitted prior art or the Little reference, or objectively presented by the Examiner, to combine the applicant's admitted prior art and the Little reference. Thus, since the applicant's admitted prior art and the Little reference alone or in combination do not teach or suggest each and every element of claims 1, 12, and 19, claims 1, 12, and 19 are novel, nonobvious, and in a condition for allowance.

Applicant therefore submits that the objections and rejections with regards to claims 1, 12, and 19 have been overcome and since claims 2, 4, 6-11, and 13-18 depend from claims 1 and 12, respectively, they are also in a condition for allowance.

In light of the amendments and remarks, Applicant submits that all objections and rejections are now overcome. Applicant has added no new matter to the application by these amendments. Applicant respectfully submits the application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, he is respectfully requested to call the undersigned attorney.

Respectfully submitted,

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